

IN THE CLAIMS

Current Listing Of Claims:

1. (Currently Amended) A method comprising:

forming a porous interlayer dielectric;

etching a via and a trench in the porous interlayer dielectric; and

exposing the dielectric to a silane coupling reagent comprising an oligomer of an alkoxysilane sealant chain having at least silicon, carbon, oxygen, and hydrogen, wherein the sealant chain reacts with a second chain, that has at least oxygen and is present in the interlayer dielectric defining the pores, to form a continuous layer over the surface of the interlayer dielectric.
2. (Original) The method of claim 1, wherein the interlayer dielectric is an oxide.
3. (Cancelled)
4. (Cancelled)
5. (Original) The method of claim 1, wherein the interlayer dielectric is a polymer.
6. (Cancelled)
7. (Cancelled)

8. (Cancelled)

9. (Original) The method of claim 1, wherein the continuous layer comprises SiO₂.

10. (Cancelled)

11. (Currently Amended) A method comprising:

etching a via and a trench in a dielectric, wherein the dielectric has a plurality of pores;

exposing the dielectric to an oxidant to prepare the surface of the dielectric;

treating the surface of the dielectric with a silane coupling reagent after exposing the dielectric to the oxidant to seal the pores exposed on the surface of the dielectric; and

forming a conductive layer on the surface of the dielectric.

12. (Original) The method of claim 11, wherein the dielectric is an oxide.

13. (Original) The method of claim 12, wherein the silane coupling reagent comprises an alkoxysilane.

14. (Currently Amended) The method of claim 13, wherein the alkoxysilane is

~~methoxypropyltrimethoxysilane~~ methoxypropyltrimethoxysilane.

15. (Original) The method of claim 11, wherein the dielectric is a polymer.

16. (Original) The method of claim 15, wherein the silane coupling reagent comprises a alkoxyvinylsilane.

17. (Original) The method of claim 16, wherein the alkoxyvinylsilane is vinyltriethoxysilane.

18. (Original) The method of claim 11, wherein the silane coupling reagent comprises an oligomeric structure.

19. (Original) The method of claim 18, wherein the oligomeric structure is a dimer.

20. (Currently Amended) The method of claim 18, wherein the oligomeric structure is designed to fill a pore with one ~~atom~~ molecule.

21. (Original) The method of claim 11, wherein treating comprises bubble vapor deposition of the silane coupling reagent.

22. (Original) The method of claim 21, wherein the bubble-vapor deposition carrier gas comprises Nitrogen (N₂).

23. (Original) The method of claim 21, wherein the bubble-vapor deposition carrier gas comprises Argon.

24. (Original) The method of claim 11, wherein treating comprises spin-coating the silane coupling reagent onto the dielectric.

25. (Currently Amended) A method comprising:

forming a dielectric having a pore; and

exposing the surface of the dielectric to a silane coupling reagent, wherein the silane coupling reagent ~~reacts with the dielectric to form a continuous film over the dielectric~~
comprises an oligomeric structure designed to fill the pore with one molecule.

26. (Original) The method of claim 25, wherein the dielectric comprises an oxide.

27. (Currently Amended) The method of claim 26, wherein the ~~silane coupling reagent~~
oligomeric structure comprises monomers of a trialkoxysilane.

28. (Original) The method of claim 25, wherein the dielectric is a polymer.

29. (Currently Amended) The method of claim 28, wherein the ~~silane coupling reagent~~
oligomeric structure comprises monomers of trialkoxyvinylsilane.

30. (Original) The method of claim 29, further comprising: exposing the dielectric to an oxidant to prepare the surface of the dielectric.

31. (Original) The method of claim 30, wherein the oxidant comprises peroxide.

32. (Original) The method of claim 25, wherein the silane coupling reagent comprises an oligomeric structure.

33. (Original) The method of claim 25, wherein the continuous film comprises an SiO₂ film covalently linked to the porous dielectric.

34. (Original) The method of claim 25, wherein a plurality of Si-OCH₃ groups condense on the porous dielectric.

35-41 (Canceled)